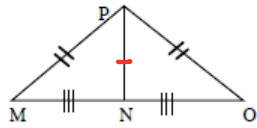
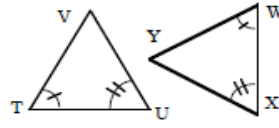
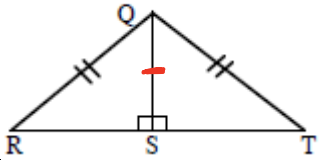
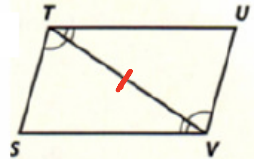
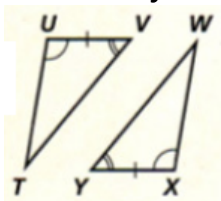
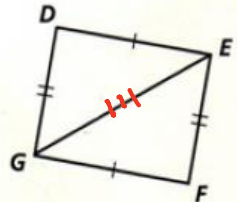
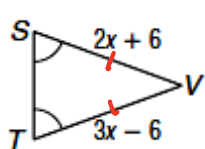
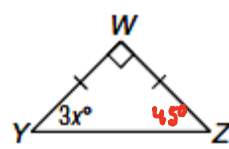
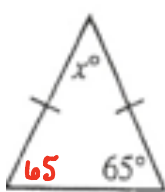
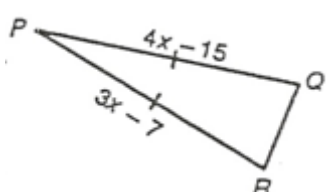
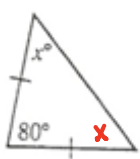


Determine if the triangles are congruent. If yes, make a congruency statement and give the reason why they are congruent. If they are not congruent, write "not congruent".

<p>1) $\triangle MNP \cong \triangle ONP$ by <u>SSS</u></p> 	<p>2) $\triangle TUV \cong \triangle$ _____ by <u>Not \cong</u></p> 
<p>3) $\triangle QRS \cong \triangle QTS$ by <u>HL</u></p> 	<p>4) $\triangle TVS \cong \triangle VTU$ by <u>ASA</u></p> 
<p>5) $\triangle TUV \cong \triangle WXY$ by <u>ASA</u></p> 	<p>6) $\triangle DEG \cong \triangle FGE$ by <u>SSS</u></p> 

<p>7) Solve for x:</p>  $\begin{array}{r} 2x + 6 = 3x - 6 \\ -2x + 6 \quad -2x + 6 \\ \hline 12 = x \end{array}$	<p>8) Solve for x:</p>  $\begin{array}{r} 3x = 45 \\ \frac{3x}{3} = \frac{45}{3} \\ x = 15 \end{array}$
<p>9) Solve for x:</p>  $\begin{array}{r} x + 65 + 65 = 180 \\ x + 130 = 180 \\ -130 \quad -130 \\ \hline x = 50 \end{array}$	<p>10) Solve for x:</p>  $\begin{array}{r} 4x - 15 = 3x - 7 \\ -3x + 15 \quad -3x + 15 \\ \hline x = 8 \end{array}$
<p>11) Solve for x:</p>  $\begin{array}{r} 2x + 80 = 180 \\ -80 \quad -80 \\ \hline 2x = 100 \\ \frac{2x}{2} = \frac{100}{2} \\ x = 50 \end{array}$	<p>12) $\triangle ABC$ is an isosceles triangle with vertex angle B, $AB = 5x - 28$, $AC = x + 5$, and $BC = 2x + 11$. Find the length of the base.</p> $\begin{array}{r} 5x - 28 = 2x + 11 \\ -2x + 28 \quad -2x + 28 \\ \hline 3x = 39 \\ \frac{3x}{3} = \frac{39}{3} \\ x = 13 \end{array}$

Write formal proofs:

<p>13) Given: $\overline{AB} \cong \overline{CD}; \overline{AD} \cong \overline{CB}$</p> <p>Prove: $\angle A \cong \angle C$</p> <p>1). $\overline{AB} \cong \overline{CD}$ $\overline{AD} \cong \overline{CB}$ Given</p> <p>2). $\overline{BD} \cong \overline{BD}$ Ref. Prop. \cong</p> <p>3). $\triangle ABO \cong \triangle CDO$ SSS</p> <p>4). $\angle A \cong \angle C$ CPCTC</p>	<p>14) Given: \overline{AE} bisects $\overline{BD}; \angle B \cong \angle D$ Prove: \overline{BD} bisects \overline{AE}</p> <p>1). \overline{AE} bisects \overline{BD} $\angle B \cong \angle D$ Given</p> <p>2). $\overline{BC} \cong \overline{CD}$ Def. of Seg. Bis.</p> <p>3). $\angle ACB \cong \angle ECD$ Vertical \angle's \cong</p> <p>4). $\triangle ACB \cong \triangle ECD$ ASA \cong</p> <p>5). $\overline{AC} \cong \overline{CE}$ CPCTC</p> <p>6). \overline{BD} bisects \overline{AE} Def. of Seg. Bis.</p>
<p>15) Given: $\overline{PQ} \parallel \overline{RS}; \overline{PR} \parallel \overline{QS}$ \overline{QS} Prove: $\angle Q \cong \angle R$</p> <p>1). $\overline{PQ} \parallel \overline{RS}; \overline{PR} \parallel \overline{QS}$ Given</p> <p>2). $\angle QPS \cong \angle RSP$ $\angle QSP \cong \angle RPS$ Alt. Int. \angle's</p> <p>3). $\overline{PS} \cong \overline{PS}$ Ref. Prop. \cong</p> <p>4). $\triangle SPR \cong \triangle PSQ$ ASA</p> <p>5). $\angle Q \cong \angle R$ CPCTC</p>	<p>16) Given: $\overline{JK} \parallel \overline{MN}; \overline{JK} \cong \overline{MN}$ Prove: L is the midpoint of \overline{K}.</p> <p>1). $\overline{JK} \parallel \overline{MN}; \overline{JK} \cong \overline{MN}$ Given</p> <p>2). $\angle K \cong \angle J$ Alt. Int. \angle's \cong</p> <p>3). $\angle JLK \cong \angle MLN$ Vertical \angle's \cong</p> <p>4). $\triangle JLK \cong \triangle MLN$ AAS \cong</p> <p>5). $\overline{KL} \cong \overline{LN}; \overline{ML} \cong \overline{LJ}$ CPCTC</p> <p>6). L is the midpoint of K Def. of MP</p>

Find the value of x for each pair of congruent triangles:

<p>17)</p> <p> $\begin{aligned} 3x+5 &= 32 \\ -5 &-5 \\ \hline 3x &= 27 \\ \frac{3x}{3} &= \frac{27}{3} \\ x &= 9 \end{aligned}$ </p>	<p>18)</p> <p> $\begin{aligned} 4x-9 &= 19 \\ +9 &+9 \\ \hline 4x &= 28 \\ \frac{4x}{4} &= \frac{28}{4} \\ x &= 7 \end{aligned}$ </p>
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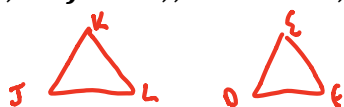
19) If $\triangle RST \cong \triangle UVW$, complete each pair of congruent parts.

$\angle R \cong \underline{\angle U}$
 $\overline{RT} \cong \underline{\overline{UW}}$

$\underline{\angle T} \cong \angle W$
 $\underline{\overline{RT}} \cong \overline{UW}$

$\angle T \cong \underline{\angle W}$
 $\underline{\overline{TS}} \cong \overline{WV}$

20) $\triangle JKL \cong \triangle DEF, m\angle J = 36, m\angle E = 64, m\angle F = 3x + 53$, Draw and label the congruent triangles and find the value of x.



$$\begin{aligned} 3x + 53 + 64 + 36 &= 180 \\ 3x + 153 &= 180 \\ 3x &= 27 \\ x &= 9 \end{aligned}$$

$x = 9$